adjacent to the apex, are found to have lost the outer and the middle layers, the innermost alone remaining. In the *Auriculæ*, this inner layer also is removed, leaving a simple cavity in the upper half of the shell. The absorption of the substance of these internal portions of shell gives more space for the body, at the same time that it renders the shell much lighter, without any diminution of its strength; the body being sufficiently protected by the outer whorl. In the *Murices*, and other shells having ridges or spines on the front of the whorls, which, in the progress of the growth of the shell, the succeeding whorls would necessarily overlap, these appendages are generally absorbed, to make way for the succeeding whorls; their absorption being effected by the edge of the mantle as it comes in contact with them. Thus do many species of Mollusca absorb, at regular epochs of their growth, certain parts of their shells, which had, at a preceding period, been deposited about the lip in the form of ribs or teeth. Mollusca have also the power of forming excavations in the shells of other animals of this class, and sometimes of other individuals of the same species: many instances of these facts are adduced by the author; among which one of the most curious is the history of the *Spiraglyphus*, which, in the progress of its enlargement, absorbs a tubular portion of shell which it had formed at an early period of its growth. They also excavate portions of solid rock in providing for their habitation. Molluscous animals, however, do not appear to be capable of removing extraneous obstacles which oppose their progress in the formation of their shell; in proof of which, various examples are adduced of foreign bodies being inclosed in the layers of shells. The author produces evidence of the secretion of the materials of the shell by other parts than the mantle, and in particular by the upper part of the foot. The operculum is in this way formed, in a manner exactly similar to shell, by the back of the foot: and its various modifications of form, the author remarks, afford important characters for the systematic classification of this department of Natural History.

June 20, 1833.

WILLIAM GEORGE MATON, M.D., Vice-President, in the Chair.

His Grace the Duke of Buccleuch, and the Right Hon. Sir Thomas Denman, were elected Fellows of the Society.

Professor Stromeyer, Foreign Memb. R.S., presented two specimens, one of the coarse-grained, the other of the fine-grained variety, of the remarkable mass of iron lately discovered near Magdeburg, and an account of which had been laid before the Royal Society of Göttingen on the 14th of last month. This iron was found, in several detached lumps, about four feet below the mould, by Mr. Kote, who considered himself the more authorized to pronounce it meteoric, as, in the chronicles of Magdeburg, the descent of a fiery meteor is recorded as having happened in the year 998. Professor Stromeyer has subjected this iron to a minute analysis, the results of which are very interesting, inasmuch as, besides the alloy of nickel and cobalt, usu-

ally present in meteoric iron, he unexpectedly found a considerable portion of molybdenum,—a rare metal on our planet, occurring only in two combinations, viz. with sulphur, as glance molybdenum, and, as molybdic acid combined with oxide of lead, in the yellow lead ore of Carinthia and a few other places.

The following are the external characters of the six masses dug up, the largest of which was about fifty-seven pounds in weight; the others were considerably smaller. Their shape is more or less oval and flat, with surfaces rather oxidated, and here and there covered with an earthy crust. The larger lumps did not exhibit any trace of scoriæ; but in some of the smaller pieces, part of the metallic mass had passed into a porous slag-like body; of which latter a few detached pieces were likewise found. This iron possesses no degree of ductility; it is not attacked by the saw, and but slightly and with difficulty by the file. Its tenacity, however, is considerable; the masses required great strength to be broken; but small fragments did not oppose greater difficulty to be reduced to a coarse powder than white cast-iron; and glass was but slightly scratched by them. On the fresh fracture, this iron exhibits upon the whole a scaly-granular structure; its internal lustre is moderately vivid, and its colour tin-white, with a strong cast of grey. Two varieties of texture were, however, observable; in some fragments it was more distinctly scaly, of a coarser grain and a deeper grey colour, united to a greater degree of tenacity. The specific gravity of the coarse-grained variety (barom. $0^{in}{\cdot}758$, therm. $21°{\cdot}5$ c.) $= 7{\cdot}2182$; that of the fine-grained $= 7{\cdot}3894$.

The mass contained much of a sulphuret not unlike in appearance to variegated copper ore, from which the subsequent analysis proved it not to differ in composition, except that a trace of sulphuret of silver was found in it. Also minute portions of capillary native copper were found in the interior of some pieces, together with here and there some translucid, pale yellow, olivine-like grains, but in too small quantities to admit of chemical examination.

Professor Stromeyer proceeds to give a detailed account of the chemical analysis to which this iron was subjected by him; according to which 100 parts are composed of—

	a. *Coarse-grained variety.*	b. *Fine-grained variety.*
Iron	76·77	74·60
Molybdenum	9·97	10·10
Copper	3·40	4·32
Cobalt	3·25	3·07
Nickel	1·15	1·28
Manganese	0·02	0·01
Arsenic	1·40	2·47
Silicium	0·35	0·39
Phosphorus	1·25	2·27
Sulphur	2·06	0·92
Carbon	0·38	0·48
	100·00	100·00

From this it appears, that though the Magdeburg iron contains all the ingredients characteristic of meteoric iron, it is essentially distinct from all others hitherto examined, by the presence of molybdenum and arsenic; by the smaller and rather anomalous proportion of nickel and cobalt which enters into its composition; by the admixture of some capillary copper and of variegated copper ore, instead of the magnetic pyrites found in some meteoric iron; and, lastly, by the presence, though only a trace, of sulphuret of silver.

Professor Stromeyer then enters into an examination of the circumstances which appear opposed to the opinion which assigns a meteoric origin to this iron, and of the objections against its being the product of artificial fusion; among which, one of the greatest is its considerable alloy of molybdenum,—a metal which has hitherto not been observed either in ores of iron and copper, or in any slags or other products of smelting furnaces. But Dr. Stromeyer has since obtained, from the Hartz Mountains, a similar and equally problematical mass of iron, the analysis of which has furnished nearly the same results as that of the Magdeburg iron, except that it contained no variegated copper ore. Future observations will probably throw more light upon the nature of these enigmatical metallic bodies; at all events, the discovery of molybdenum in them is so far of great interest, as, in case they should ultimately prove to be artificial products, it is fair to conjecture that that scarce metal must enter into combinations still unknown to the chemical mineralogist, or occur in some ores in a masked state and such small proportions as to become (like titanium) apparent only in the products of the long-continued operations of the smelting furnace.

The following papers were read:—

1. "Observations on the Physiology of the Nerves of Sensation, illustrated by a case of Paralysis of the Fifth Pair." By John Bishop, Esq. Communicated by P. M. Roget, M.D., Sec. R.S.

The influence of the fifth pair of nerves on the functions of sight, smell, and taste, is a subject which has lately occupied the attention of physiologists. Many experiments have been made on living animals with a view to its elucidation; but these experiments have never led to any satisfactory conclusion. Considerable light has been thrown upon this obscure question by the phenomena attending a case of paralysis of the fifth pair of nerves, which occurred in the author's practice, and of which he gives the history in detail, after quoting the account given by Magendie of his experiments and speculations respecting the functions of these nerves.

The lady who was the subject of these observations had been affected with total insensibility of the left side of the face and head, together with strabismus, accompanied with double vision; but the powers of voluntary motion of all these parts remained entire. The globe of the left eye was quite insensible to touch, though it retained the power of vision unimpaired, excepting that for some time previous to death it had lost the faculty of distinguishing colours. The left nostril received no impressions from the most irritating stimulants,